

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jiang, et al.	Art Unit:	1775
Serial No.:	10/821,023	Examiner:	Savage, Jason L
Filed:	04/07/2004		
Docket No.:	A369-USA		
For:	Brazing Titanium to Stainless Steel Using Ti-Ni Filler Material		

DECLARATION OF GUANGQIANG JIANG, Ph.D.

VIA EFS Web

**Mail Stop Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450**

Sir:

I, Guangqiang Jiang, declare that:

- 1) I am the inventor of the subject matter disclosed and claimed in the subject patent application. I am familiar with the application and the pending claims.
- 2) I have worked extensively with metallic bonding and brazing of metals during the course of my employment at the Alfred Mann Foundation, as well as during my studies at the University of Southern California, where I earned my Ph.D. in Biomedical Engineering with emphasis on biomaterials. I am responsible for developing materials and processes for producing new products.
- 3) I have reviewed U.S. Patent 6,722,002 to Chang. Chang suggests that the brazing alloy according to this invention are useful for brazing components comprising Ti, Ni, or Fe based alloys. [col 5, lines 4-13]. Figure 1 below presents a

schematic representation of Chang's exemplar application of such a roll-bonded composite. Titanium is never directly bonded to stainless steel with a composite braze foil between them. I seriously doubt that Chang's bonding technique will work as it is taught.

The Ni/Ti/Ni roll-bonded composite is roll-bonded to the 316 stainless steel to form a five layer composite self-brazing material [col 6, line 58]. Then the five layer composite is placed between two sheets of Beta-21 Ti sheet which are then brazed to form a composite. The roll-bonded Ni/Ti/Ni brazing alloy does not contact the stainless steel sheets. If Chang is deemed to be referring to stainless steel when he mentions that "brazing alloys according to this invention are useful for brazing components comprising or consisting of Ti, Ni, or Fe based alloys" [col 5, lines 41-43], then the preceding description is his teaching of Fe based alloy bonding. In start contrast to Applicant's invention, it does not involve the roll-bonded composite reacting with or contacting the Beta-21 Ti sheet.

The next exemplar is presented schematically in Figure 2 below. The Ni/Ti/Ni roll-bonded composite is roll bonded to one surface of a Beta-21 Ti alloy strip. [col 6, lines 65-67] Then the roll-bonded five layer composite is brazed to a Beta-21 Ti strip. Again, the Ni/Ti/Ni brazing alloy does not contact or bond the outer Ti strip. There is no mention or teaching of stainless steel bonding in this teaching of Chang.


Chang does not teach or suggest that Ni/Ti/Ni can be used to bond stainless steel to titanium as taught and claimed by Applicant's invention.

4) The undersigned declares further that all statements made herein of their own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

06/12/2007

Date



Guangqiang Jiang

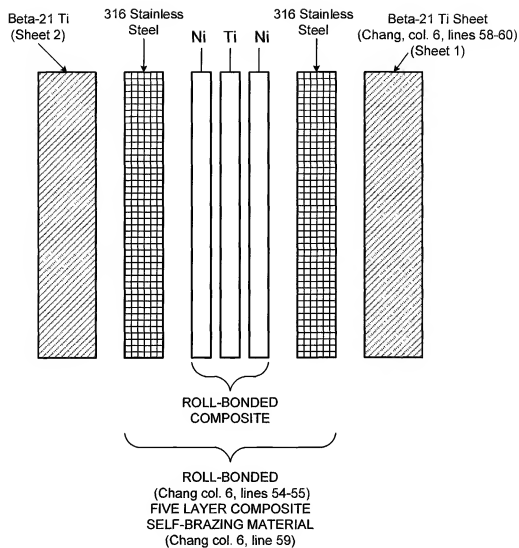


FIG. 1

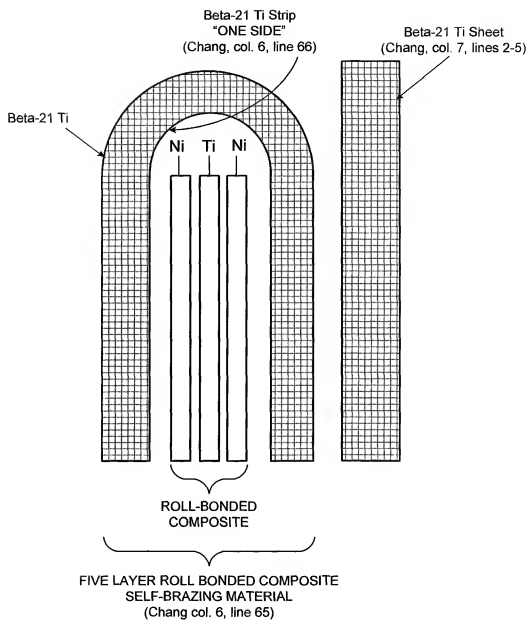


FIG. 2